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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,655	08/22/2000	Edward Brittain Stokes	040849/0143	9163

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WASHINGTON, DC 20007

EXAMINER

ZIMMERMAN, GLENN

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,655

Applicant(s)

STOKES ET AL.

Examiner

Glenn Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 and 18-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-16, 18-20, 25-38, 40 and 42 is/are allowed.
- 6) ☒ Claim(s) 21-24, 39 and 41 is/are rejected.
- 7) ☒ Claim(s) 33, 34, 37 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 22, 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Amendment, filed on March 13, 2003, has been entered and acknowledged by the examiner.

Drawings

Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 33, 34, 37 and 40 are objected to because of the following informalities: In claim 33 line 5, the examiner suggests changing "onto a" to "onto the luminescent material which comprises a". In claim 34 line 6, the examiner suggests changing "onto" to "onto the luminescent material which comprises". In claim 37 line 4, the examiner suggests changing "first a" to "a first". The examiner suggests that you might want to cancel claim 40 as it is a duplicate copy of claim 20 MPEP 706.03(k). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 39 depends from a canceled claim, and is indefinite.

A 112 2nd paragraph rejection has been determined for claim 39, as written about above. However, a further evaluation of the claim will be done while interpreting "claim 1" in line 1 as "claim 2".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-24 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohn et al. U.S. Patent 6,066,861.

Regarding claims 21 and 41, Hohn et al. teach all the limitations of claim 21. Hohn et al. teach a white light emitting device (**col. 8 lines 33-35**), comprising: a light emitting diode (**semiconductor conducting body Fig. 2 ref. 1**); radiation scattering

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particles (**col. 9 lines 20-25**) in a packed layer or in a carrier medium (**transparent envelope ref. 15**) over the light emitting diode; and a phosphor (**col. 8 lines 33-35; luminous substance particles ref. 6**) or an organic dye which emits radiation having a second peak wavelength in response to incident light emitting diode radiation having a first peak wavelength, such that the device output appears white to an observer; wherein the phosphor or organic dye is located over and separately from the radiation scattering particles located in the packed layer or in the carrier medium (**Fig. 2**), but fail to teach a package containing a reflector cup. Hohn in the analogous art teach a package containing a reflector cup (**col. 8 lines 35-54**). Additionally, Hohn teaches incorporation of such a package containing a reflector cup to improve reflecting emitted light and for use on surface-mounted or printed circuit boards (**col. 8 lines 35-54**). The incorporation of such a package containing a reflector cup would also be conventional.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a package containing a reflector cup in the semiconductor component of Hohn et al. since such a modification would improve the reflection of emitted light and be applicable for use on surface-mounted or printed circuit boards as taught by Hohn et al.

Referring to claim 22, Hohn et al. teach all of the limitations of the claim. Hohn et al. teach the device of claim 21, wherein: the light emitting diode comprises a blue or an ultraviolet light emitting diode (**col. 5 lines 36-37; col. 4 line 45**); the radiation scattering particles comprise light or UV radiation scattering particles in a carrier medium (**col. 9 lines 22-29**); and the luminescent material comprises a yellow or white

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light emitting phosphor layer or a dispersion of a phosphor in an epoxy or silicone (**col. 4 lines 22-26**).

Referring to claim 23, Hohn et al. teach all of the limitations of the claim. Hohn et al. teach the device of claim 22, wherein the light emitting diode comprises a light emitting diode having an emission wavelength of 365 to 420 nm (**col. 4 line 59**); and the luminescent material comprises: i) a white light emitting phosphor layer comprising one or more phosphors; or ii) a dispersion of a least one phosphor and an epoxy or silicone (**col. 4 lines 22-27**).

Referring to claim 24, Hohn et al. teach all of the limitations of the claim. Hohn et al. teach the device of claim 22, wherein the light emitting diode comprises a blue emitting InGaN light emitting diode (**col. 4 line 45**) and the luminescent material comprises a dispersion of an epoxy or silicone and a YAG:Ce³⁺ phosphor (**col. 6 lines 34-46**).

Allowable Subject Matter

Claims 2-20, 32-38, 40 and 42 are allowed.

Claims 25-31 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 39 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a light emitting device including the combination of all the limitations as set forth in claim 2, and specifically a mean diameter of the radiation scattering particles is between $\lambda/3$ and $\lambda/2$, where λ is a first peak emission wavelength of the radiation source could not be found elsewhere in prior art.

Regarding claims 3-6, 8-13, 18-20, 39 and 40, claims 3-6, 8-13, 18-20, 39 and 40 allowed for the reasons given in claim 2, because of their dependency status on claim 2.

Regarding claim 7, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a light emitting device including the combination of all the limitations as set forth in claim 7, and specifically the radiation scattering particles located separately from the luminescent material; the radiation source comprises a light emitting diode or a laser diode emitting radiation having a first peak emission wavelength; and the luminescent material comprises an organic dye which emits radiation having a second peak wavelength in response to incident radiation source radiation could not be found elsewhere in prior art.

Regarding claim 32, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a method of generating white light including the combination of all the limitations as set forth in claim 32, and specifically wherein the radiation scattering material comprises radiation scattering particles located separately from the luminescent material, and a mean diameter of the radiation scattering particles is between $\lambda/3$ and $\lambda/2$, where λ is a first

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peak emission wavelength of the radiation source could not be found elsewhere in prior art.

Regarding claims 33-35, claims 33-35 are allowed for the reasons given in claim 32, because of their dependency status on claim 32.

Response to Arguments

Applicant's arguments filed March 13, 2003 relative to claim 21 have been fully considered but they are not persuasive.

Regarding claim 21, the applicant's assert that "If the transparent envelope 15 of Hohn contains light scattering particles, then the casting composition 5 must also contain both the light scattering particles and the phosphor. Thus, in the device of Hohn, the phosphor is not located separately from the light scattering particles, as required by claim 21.". The examiner notes that claim 21 states that "wherein the phosphor or organic dye is located over and separately from the radiation scattering particles located in the packed layer or in the carrier medium.". The examiner notes that there are two items containing diffusers/radiation scattering particles. One is the casting composition and the other is the transparent envelope. The casting composition reference 5 and the transparent envelope reference 15 of Hohn are two different items, so the phosphor in layer 4 which does has light-scattering particles within the casting composition is located over and separately from the radiation scattering particles of the carrier medium. The radiation scattering particles of the carrier medium reference 15 of Hohn are clearly considered a different component then the radiation scattering

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particles of the casting composition. The examiner also notes that the claim 21 is only concerned with the radiation scattering particles of the packed layer or in the carrier medium, so if there are radiation scattering particles in the phosphor then this is covered under the transitional phrase "comprising" of the claim. The Hohn reference clearly reads over claim 21 as a 103(a) reference.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Respectfully, it would be helpful if the applicant used the Revised Manner of Making Amendments of MPEP 714[R-1] III because the claims in this application are spread out over several actions and amendments and must be patched together from

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different amendments. Using the Revised Manner of Making Amendments all of the claims are right their in the same amendment for the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.

Glenn Zimmerman
May 20, 2003


ASHOK PATEL
PRIMARY EXAMINER